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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,406

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Tsung-Liang Lin

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EXAMINER

DEPPE, BETSY LEE

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

12/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/646,406

Applicant(s)

LIN ET AL.

Examiner

Betsy L. Deppe

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been considered. Applicant's argument that the Office Action does not disclose a "joint clock source for supplying clock pulses to ... the D/A interface" with respect to claim 1 (see page 8) has been considered but are moot in view of the new ground(s) of rejection. However, the other arguments are not persuasive for reasons explained below.

2. In response to the applicant's arguments based on Joshi et al. and Dent (see pages 8-9), the Examiner is not equating the VCO to the joint clock source in the claims. Dent is cited to show that crystal oscillators (such as that in Robinson et al.) is a VCO and Joshi et al. discloses connecting a VCO (and hence, a crystal oscillator) to an analog ground separate from other grounding. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the crystal oscillator of Robinson et al. to a separate ground in order to minimize the noise.

Furthermore, it is noted that the features upon which applicant relies (i.e., VCO 340 and crystal oscillator 350 on page 9, lines 2-5) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 2611

3. In response to the applicant's argument that the Office Action fails to ascertain the differences between the prior art and the claims in issue (see page 11), the Examiner respectively disagrees. For example, in paragraph 6 of the Office Action mailed July 17, 2007, the Examiner indicates that "Isley, Jr. et al. does not disclose a first ground reference, a second ground reference, and a joint clock source" thereby differentiating between the prior art (i.e. Isley, Jr. et al.) and the claims in issue (i.e. claims 1, 4, 9 and 12). Furthermore, on page 4 of the Office Action, the Examiner indicates that "Isley, Jr. et al. in view of Robinson et al. does not teach connecting the joint clock source directly to the first ground reference and not connecting the joint clock source directly to the second ground reference" before introducing Joshi et al. and Dent. Therefore, the Office Action has not failed to meet the standards of Graham v. John Deere Co.

4. In response to the applicant's argument that the Office Action fails to resolve the level of ordinary skill in the art (see page 11), the Examiner does not need to explicitly indicate the level of ordinary skill in the art in the rejection since the level of ordinary skill is implicit in view of the prior art applied.

5. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (see page 11), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge

which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

6. In response to the applicant's argument that the Office Action did not provide a rationale for combining Dent with the other references (see page 11), Dent is used to explain why the teachings of Joshi et al. and Robinson et al. can be combined. As explained above, Dent discloses that a crystal oscillator (such as that in Robinson et al.) is a VCO and since Joshi et al. discloses connecting a VCO (and hence, a crystal oscillator) to an analog ground separate from other grounding, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the crystal oscillator of Robinson et al. to a separate ground in order to minimize the noise.

Claim Objections

7. The Examiner requests clarification of the amendment to claim 9, line 20. In the Office Action mailed July 17, 2007, the Examiner suggested deleting the comma and changing "without" to "not" for improved readability. Claim 9, as amended, shows the deletion of "without" from the previous version of claim 9 but also shows "not" as being deleted via double brackets. Since "not" was not in the previous version of claim 9, it is

Art Unit: 2611

unclear whether the applicant intended to insert "not" as suggested by the Examiner.

Appropriate correction/clarification is required.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1, 2, 4, 5, 7-10, 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isley, Jr. et al. (US Patent No. 5,930,295 cited in the Office Action mailed November 24, 2006) in view of Robinson et al. (US Patent No. 5,943,290 cited in the Office Action mailed November 24, 2006), Joshi et al. (US Patent No. 5,650,754 cited in the Office Action mailed July 17, 2007) and Dent (US Patent No. 7,133,647 cited in the Office Action mailed July 17, 2007).

10. With regard to claims 1, 4, 9 and 12, Figure 1 of Isley, Jr. et al. discloses the claimed invention including a medium within which a communication signal propagates through (14), an analog circuit (e.g. any of the components that are part of 18), a digital circuit (20), an A/D interface circuit (28) and a D/A interface circuit (34). (See column 2, line 42- column 3, line 13 and column 4, lines 20-41) However, Isley, Jr. et al. does not disclose a first ground reference, a second ground reference, and a joint clock source.

Figure 1 of Robinson et al. discloses an integrated circuit with a joint clock source that provides signals to an analog circuit (12) and a digital circuit (14) wherein the analog circuit has a first ground reference (AGND), the digital circuit has a second

Art Unit: 2611

ground reference (DGND) and a joint clock source (see XTAL in Figure 4) that supplies clock pulses to the analog circuit (including elements 42, 44 and Analog Portion in Figure 4) and the digital circuit (including elements 56, 58 and Digital Portion in Figure 4). (See column 1, lines 19-23; column 2, lines 1-26; column 3, lines 63-67; and column 4, line 65 - column 5, line 3) Since it is implicit that the transceiver/modem of Isley, Jr. et al. requires clocking signals, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Robinson et al. with Isley, Jr. et al. by implementing the transceiver of Isley, Jr. et al. as an integrated circuit with the separate ground references as taught by Robinson et al. in order to reduce the size of the transceiver while minimizing the noise between the digital and analog portions of the integrated transceiver circuit. Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a joint clock source to provide the clock signals to the various components in Isley, Jr. et al. (e.g. the A/D converter and D/A converter in analog circuit 18) in order to minimize the number of oscillators or clock sources needed for the circuit thereby further reducing the size of the transceiver.

However, Isley, Jr. et al. in view of Robinson et al. does not teach connecting the joint clock source directly to the first ground reference and not connecting the joint clock source directly to the second ground reference. Joshi et al. discloses connecting a VCO to an analog ground with separate grounding for other components. (See Figure 4 and column 7, line 60 - column 8, line 8) Since VCOs are crystal oscillators (see Dent, column 1, lines 12-13), it would have been obvious to one of ordinary skill in the art at

Art Unit: 2611

the time the invention was made to connect the crystal oscillator of Robinson et al. to the analog ground (as taught by Joshi et al.) in order to minimize noise.

11. With regard to claims 2 and 10, Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent discloses the claimed invention including an antenna and propagating the signal through the air. (See Isley, Jr. et al., "14" in Figure 1)

12. With regard to claims 5 and 13, Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent discloses the claimed invention including a switch (36), a downconverter (26), an upconverter (32) and a synthesizer (24). (See Isley, Jr. et al., Figure 1)

13. With regard to claims 7 and 15 Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent discloses the claimed invention including an analog-to-digital converter. (See Isley, Jr. et al., "28" in Figure 1)

14. With regard to claims 8 and 16, Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent discloses the claimed invention including a digital-to-analog converter. (See Isley, Jr. et al., "34" in Figure 1)

15. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isley, Jr. et al in view Robinson et al., Joshi et al. and Dent as applied to claims 1 and 9, respectively, above, and further in view of Hoobler (US Patent No. 7,130,337 B2 cited in the Office Action mailed November 24, 2006). Isley, Jr. et al. in view of Robinson et al. discloses the claimed invention except for propagating the communication signal through a wire.

Hoobler discloses that modems may be used in RF (i.e. over the air) systems or in power line systems (i.e. over a wire). (See column 3, lines 62-63) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the invention disclosed by Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent in order to reduce noise of modems in wired communication systems. Whether the modem is implemented in a RF or wired communication system does not affect the functionality or operability of the modem.

16. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isley, Jr. et al in view Robinson et al., Joshi et al. and Dent, as applied to claims 1 and 9, respectively, above, and further in view of Sorrells et al. (US Pub. No. 2004/0013177 A1 cited in the Office Action mailed November 24, 2006). Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent discloses the claimed invention including a baseband processor for digital signal processing. (See Isley, Jr. et al., Figure 1, "20"). However, Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent does not teach a MAC unit.

Figure 3B of Sorrells et al. shows an integrated transceiver (322) interfacing with a MAC unit (112). Since the protocol or standard to the communication system does not affect the functionality or operation of the integrated transceiver circuit, it would have been obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to implement the method or circuit disclosed by Isley, Jr. et al. in view of Robinson et al., Joshi et al. and Dent in a system that operates in accordance

Art Unit: 2611

with such as IEEE 802.11 standards in order to optimize the performance of such a system by reducing noise caused by an integrated transceiver. Furthermore, in order for the integrated transceiver circuit to properly interface with controller of such a system, it is implicit that a MAC unit must be connected to the integrated transceiver circuit. (See Sorrells et al., paragraphs [0045]-[0046])

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 10/646,406

Page 10

Art Unit: 2611

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'B. Deppe', with a stylized, cursive script.

Betsy L. Deppe
Primary Examiner
Art Unit 2611